In The Claims:

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1. A method for transmitting communications signals to a plurality of mobile terminals, comprising:

processing a received signal at a ground hub;

radiating said signal through multiple paths to at least two satellites;

re-radiating said signal from said at least two satellites to an intended mobile terminal;

perturbing the inclination and eccentricity of said at least two satellites relative to the same geosynchronous reference orbit;

whereby the periods of geosynchronous orbits of said at least two satellites remain substantially constant.

2. The method of claim 1, further comprising:

radiating a signal from said intended mobile terminal to said at least two perturbed satellites;

re-radiating said signal from said at least two perturbed satellites to said ground hub.

3. The method of claim 2, further comprising:

determining a relationship between said inclination and said eccentricity of said satellites

such that they appear to move at a constant speed along circular paths whose centers are located at the position of a hypothetical reference satellite in an unperturbed geosynchronous orbit.

4. The method of claim 3, further comprising:

maintaining the geometry of said cluster of at least two satellites such that the distances between any two of said satellites is relatively constant.

5. The method of claim 4, further comprising:

adding additional satellites to said at least two satellites to augment the satellite constellation.

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6. The method of claim 4, wherein the conditions for circular apparent motion of the perturbed satellite relative to said satellite constellation center is approximated by the following:

$$\sin i = 2\varepsilon$$
$$t_o = \pm \tfrac{1}{4} T_{GEO}$$

7. A mobile wireless communication system, comprising:

a satellite constellation consisting of a plurality of satellites each in a slightly perturbed geosynchronous orbit;

each of said plurality of satellites being capable of relaying signals between the ground hub and the plurality of user terminals in either direction;

whereby as said satellite constellation appears to rotate the apparent inter-satellite spatial relationships are maintained.

8. The mobile wireless communication system of claim 7, wherein each of said plurality of satellites has its inclination and eccentricity perturbed relative to a common geosynchronous reference orbit.

9. The mobile wireless communication system of claim 8, wherein the orbit of each of said plurality of satellites is perturbed such that it appears to move at a constant speed along a circular path as viewed by a single user.

10. The mobile wireless communication system of claim 7, wherein the respective distances among the said plurality of satellites is substantially constant.

11. The mobile wireless communication system of claim 9, wherein the conditions for circular apparent motion of the perturbed satellite relative to said satellite constellation center is approximated by the following:

$$\sin i = 2\varepsilon$$
$$t_o = \pm \frac{1}{4} T_{GEO}$$

12. The mobile wireless communication system of claim 7, wherein in order for coherent reception of signals by their intended user, said intended user's location must be determined to within a specified tolerance ε_x, which is determined according to the following equation:

$$\varepsilon_x << \frac{\varepsilon_{tol} \lambda_{\min} r_{\min}}{\Delta D_{x\max}}$$

13. The mobile wireless communication system of claim 7, wherein in order for incoherent reception of signals from interfering (non-intended) users, said interfering users must be displaced at least a distance

$$\Delta x_{\min} \geq \frac{c r_{\max}}{2 W_N \delta \Delta D_{x\min}}$$

from the user receiving the signal

14. The mobile wireless communication system of claim 11, wherein the apparent motions of said plurality of satellites in said satellite constellation can be arranged to appear circular as perceived from any one point in the coverage area.

15. A method for establishing a link between a ground hub and a plurality of mobile terminals, comprising:

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$$\sin i = 2\varepsilon$$
$$t_o = \pm \frac{1}{4} T_{GEO}$$

19. The method of claim 15 wherein in order for incoherent reception of signals from interfering (non-intended) users, said interfering users must be displaced at least a distance

$$\Delta X_{MIN} \geq \frac{Cr_{MAX}}{2W_N \delta \Delta D_{xMIN}}$$

from the user receiving the signal.

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20. The method of claim 15, wherein in order for coherent reception of signals by their intended user, said intended user's location must be determined to within a specified tolerance ε_x, which is determined according to the following equation:

$$\varepsilon_x \ll \frac{\varepsilon_{tol}\, \tau_{\min}\, r_{\min}}{\Delta_{x\min}}$$

preprocessing a received signal at said ground hub;

transmitting said signal through a plurality of satellites in a satellite constellation to an intended one of the mobile terminals;

perturbing the inclination and eccentricity of said plurality of satellites relative to a common geosynchronous reference orbit; and

determining a relationship between said inclination and said eccentricity of said plurality of satellites such that they appear to move at a constant speed along circular paths where centers are located at a position defined by a hypothetical reference satellite in an unperturbed geosynchronous orbit.

16. The method of claim 15, further comprising:

maintaining the periods of geosynchronous orbit of said plurality of satellites substantially constant.

17. The method of claim 15, further comprising:

maintaining the apparent inter-satellite spatial relationships between said plurality of satellites as they appear to rotate.

18. The method of claim 15, wherein said relationship is approximated by the following: